

Psycholinguistic Correlates of Progress in Literature of Students of Russian Vocational Training School

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The article describes psycholinguistic correlates of progress in literature, discovered on the basis of correlation analysis of grades, and results of several psychological and psycholinguistic tests were taken in the context of comprehensive psycholinguistic research based on one of Russian vocational training schools. Analysis revealed a list of psycholinguistic characteristics related with progress in literature.

Keywords: psycholinguistics, correlation analysis, progress in literature

Introduction

Currently, individual speech and psychological characteristics of students of primary and secondary vocational education institutions rarely become the objects of psychological researches. Psychological and educational researches in this area mainly focus on study and development of professional skills.

Meanwhile, the development of speech and psychological characteristics of students have a direct impact on the understanding of not only the humanities, but also all general subjects, which, in their turn, serve as a basis for the acquisition of professional disciplines. The latter, ultimately determines the success of professional development and socialization of students.

That is why successful teaching and training specialists are not possible without taking into account individual psycholinguistic characteristics of students. In the context of comprehensive psycholinguistic research based on vocational training school, the author tried to identify psycholinguistic correlations of the progress in disciplines pertaining to the humanities (literature, Russian, English, and Bashkir (native language)). In current article, the author wants to present psycholinguistic correlates of progress in literature.

Methods and Participants

These correlates were elicited on the correlation analysis of semester grades and results of several wide-spread in Russia psychological and psycholinguistic tests, such as Cattell's "the 16 personality factor questionnaire", Leonhard-Smishek's "characterological questionnaire", Rusalov's "structure of temperament questionnaire, test detecting communicative and organizational abilities, associative experiment", and Ebbinghaus' test (cloze-test).

All tests were taken in 2010. One hundred male students receiving professions "auto mechanics" and "foreman of agricultural industry" in the age from 15 to 19 were examined. The grading system in Russia is gradual progression from "2" (bad) to "5" (excellent). This progression was used for correlation analysis. The

average grade in literature of all groups of students was 3.68. Correlations were measured using Kendall rank correlation (SPSS (Statistical Package for the Social Science) Version 17).

Results

First of all, the author offered students to answer the questions of “the 16 personality factor questionnaire” developed by British-born American psychologist Raymond Bernard Cattell (1905–1998), the author is one of the most authoritative conceptions of personality. Cattell’s “the 16 personality factor questionnaire” for the first time was published in 1949. It allows estimating individual psychological characteristics according to personality factors: warmth, reasoning, emotional stability, dominance, liveliness, rule-consciousness, social boldness, sensitivity, vigilance, abstractedness, privateness, apprehension, openness to change, self-reliance, perfectionism, and tension (Cattell & Mead, 2008). The author used a shorter version of the questionnaire (Urazaev, 2001). Correlations between the results and grades in literature are presented in Table 1.

Table 1

Coefficients of Correlation Between the Results of the 16 Personality Factor Questionnaire and Grades in Literature

Individual psychological characteristic	Grade in literature
A (Warmth)	0.184*
B (Reasoning)	0.047
C (Emotional stability)	0.018
E (Dominance)	-0.028
F (Liveliness)	0.010
G (Rule-consciousness)	0.032
H (Social boldness)	0.094
I (Sensitivity)	0.033
L (Vigilance)	-0.024
M (Abstractedness)	0.018
N (Privateness)	-0.056
O (Apprehension)	0.082
Q1 (Openness to change)	0.048
Q2 (Self-reliance)	-0.230**
Q3 (Perfectionism)	0.160
Q4 (Tension)	-0.043

Notes. ** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed).

Grades in literature correlate with factor of warmth ($r = 0.184$; $p < 0.05$) and with factor of self-reliance ($r = -0.230$; $p < 0.01$). It means that the higher grades in literature have warm-hearted, caring, attentive to others, group-orientated, and affiliative students.

The second method was the questionnaire determining the type of character accentuation by K. Leonhard-H. Smishek. A German psychologist and psychiatrist Karl Leonhard (1903–1988), the author is one of the first theories of personality, marked out 10 types of personality accentuation: hyperthymic, sticking, emotive, pedantic, anxious, cyclothymic, demonstrative, excitable, dysthymic, ecstatic (Leonhard, 1981). Questionnaire contains 88 questions. According to the keys, the author estimated average indicators of types of student’s personality accentuation. Some of them have significant correlations with grades in literature (see Table 2).

Table 2

Coefficients of Correlation Between the Results of Leonhard-Smishek's Characterological Questionnaire and Grades in Literature

Type of personality accentuation	Grade in literature
Hyperthymic	0.177*
Stickling	0.198*
Emotive	0.212*
Pedantic	0.057
Anxious	-0.059
Cyclothymic	-0.123
Demonstrative	0.119
Excitable	-0.024
Dysthymic	0.055
Ecstatic	0.004

Note. * Correlation is significant at the 0.05 level (2-tailed).

The higher grades in literature have students with hyperthymic ($r = 0.177$; $p < 0.05$), sticking ($r = 0.198$; $p < 0.05$), and emotive ($r = 0.212$; $p < 0.05$) types of character accentuation. Hyperthymic type is characterized by permanent elated mood, high activity, and enterprise. The main characteristic of sticking type is steady effect. Emotive type characterizes sensitive and impressionable people being notable for depth of emotional experience.

Minimized version of Rusalov's "structure of temperament questionnaire" determines eight elements of temperament structure: ergonicity, ergonicity in communication, plasticity, plasticity in communication, tempo, tempo in communication, emotionality, and emotionality in communication (Rusalov, 1990). This method was developed by one of the leading Russian specialists in psychophysiology, psychodiagnostics, and differential psychology (Rusalov, 1990). The results of this test are used to learn psychodynamic characteristics of subject's personality according to the answers to 105 questions.

Table 3

Coefficients of Correlation Between the Results of Rusalov's Structure of Temperament Questionnaire and Grades in Literature

Psychodynamic characteristic of personality	Grade in literature
Ergonicity	0.198*
Ergonicity in communication	0.077
Plasticity	0.132
Plasticity in communication	-0.087
Tempo	0.146
Tempo in communication	0.093
Emotionality	0.024
Emotionality in communication	0.024

Note. * Correlation is significant at the 0.05 level (2-tailed).

The extended version of structure of temperament questionnaire measures four consistent characteristics of behavior that have biological determination and that are the most stable within the life span. Correlations between scales of Rusalov's "structure of temperament questionnaire" and other tests are expounded in the article "Psycholinguistic Correlates of Temperament of Students of Vocational Training Institutions"

(Nuriakhmetov, 2011). Correlations between structure of temperament questionnaire and grades in literature are shown in Table 3.

It is seen that only one significant correlation between grades in literature and level of ergonicity ($r = 0.198$; $p < 0.05$). Ergonicity defined as the energetic component of activity, as the endurance, the ability to keep intensive and/or prolonged work within a certain type of activity (Rean, 2011). These qualities are peculiar to students with good progress in literature.

In this research, the author also used “the test detecting communicative and organizational abilities”. It was offered by B. A. Fedorishin (1980). There are 40 “Yes/No” questions. According to keys, prevalence of communicative or organizational abilities is identified. Correlations are shown in Table 4.

Table 4

Coefficients of Correlation Between the Results of Test Detecting Communicative and Organizational Abilities and Grades in Literature

Ability	Grade in literature
Communicative	0.071
Organizational	0.166*

Note. * Correlation is significant at the 0.05 level (2-tailed).

The analysis shows that students having good results in literature characterized by prevalence of organizational abilities ($r = 0.166$; $p < 0.05$).

Associative experiment is one of the first projective methods. For the first time it was used by English scientist, the founder of differential psychology Francis Galton (1822–1911) in 1879 (Belyanin, 2004). History of development of associative experiment is widely observed in Goroshko’s (2001) monograph.

For this experiment, the author chose 20 stimulus words: the Sun, winter, mother, Russia, friendship, summer, apple, to smoke, autumn, black, spring, car, animal, vacation, to work, student, white, dog, studies, future. Stimulus words were presented orally; reactions were recorded in answer sheet by students. After the experiment, we counted the average length of association array and percentage of paradigmatic and syntagmatic associations in the reactions of each student.

The longest average association array consisted of 3.75 words; the shortest one consisted of 0.7 words. The middle length of association array was equal to 1.83 words. Paradigmatic associations accounted for 53.46% of reactions; syntagmatic associations accounted for 46.45%. After counting the results, the author also tried to find correlations with grades in literature (see Table 5).

Table 5

Coefficients of Correlation Between the Results of Associative Experiment and Grades in Literature

Association	Grade in literature
The length of associative array	0.358**
Paradigmatic associations (%)	0.144
Syntagmatic associations (%)	-0.143

Note. ** Correlation is significant at the 0.01 level (2-tailed).

It is seen that the length of associative array correlates with grades in literature ($r = 0.358$; $p < 0.01$). It means that students having longer associative array had higher grades.

Last of all, the author offered students to pass Ebbinghaus’ test also known as cloze-test. German psychologist Hermann Ebbinghaus (1850–1909) was one of the founders of experimental psychology. Being a

teacher, he created the method that enabled to check the level of intellectual development of students (Hoffman & Bamberg, 2006). Participants have to fill the gaps in bound text given to them in written.

The author used Russian variation of text from Mironova's (2006) test collection. Some students easily filled most of the gaps, but some of them could not understand the sense of the text without missed words and had many grammatical and logical mistakes. The count of correctly filled gaps was used for correlation analysis. The coefficient is given in Table 6.

Table 6

Coefficient of Correlation Between the Results of Ebbinghaus' Test and Grades in Literature

Ebbinghaus' test	Grade in literature
Number of correctly filled gaps	0.282**

Note. ** Correlation is significant at the 0.01 level (2-tailed).

Correlation analysis revealed the connection between grades in literature and results of Ebbinghaus' test ($r = 0.282$; $p < 0.01$). Students who had higher grades filled more gaps and made it more correctly.

Conclusions

Summing up all said above, it can make a list of psycholinguistic characteristics linked with the progress in literature. Higher grades in literature have the next psycholinguistic correlations:

- (1) High level of warmth;
- (2) Low level of self-reliance;
- (3) Hyperthymic, sticking, or emotive type of character accentuation;
- (4) High level of ergonicity;
- (5) Prevalence of organizational abilities;
- (6) Long associative array;
- (7) Ability to fill the gaps in bound text correctly.

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